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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,427	06/19/2001	Peter A.J. van der Made	81924.0002	4888

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EXAMINER	
GUILL, RUSSELL L	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	09/885,427	MADE, PETER A.J. VAN DER	
	Examiner	Art Unit	
	Russell L. Guill	2123	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Russell L. Guill*.

(2) *Kevin Teska*.

(3) *Steve Wigmore (Applicant's representative)*.

(4)_____.

Date of Interview: *02 May 2005*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *New independent claims 12, 21, 30*.

Identification of prior art discussed: _____.

Agreement with respect to the claims f)☒ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Reviewed the claims Agreement was reached regarding claim language to overcome 112 and 101 issues. Attached is an annotated copy of the proposed claims*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Russ Guill
Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Proposed New Claims for U.S. Patent Application Serial No. 09/885,427
entitled, "Analytical Virtual Machine"
K&S File No. 05456.105039
Attn: Assistant Examiner Guill
For Telephonic Interview on Monday, May 2, 2005 @ 2:00PM

12. (New) A computerized method for identifying malicious code in a target program running in a virtual machine of a computer system, the method comprising:

evaluating a file format of the target program;

evaluating control fields within a header of a file containing the target program;

automatically configuring the virtual machine to execute the target program in one of three modes of operation based on the file format and the control fields within the header of the file, a first mode of operation comprising a real mode, a second mode of operation for executing target programs comprising a high level programming language, and third mode of operation comprising a protected mode for executing target programs comprising thirty-two bit code;

storing behavior flags representing behavior of the target program during execution of the target program by the virtual machine;

storing a sequence in which the behavior flags are set by the target program during execution of the target program by the virtual machine;

passing behavior flag data and sequence flag data to the computer system for evaluation after execution of the target program by the virtual machine; and

terminating the virtual machine after execution of the target program, thereby removing from the computer system a copy of the target program that was contained within the virtual machine.

13. (New) The method of Claim 12, further comprising evaluating the behavior flag data with the computer system.

14. (New) The method of Claim 12, further comprising initializing the virtual machine within the computer system, the virtual machine comprising a virtual computer implemented by software simulating functionality of a central processing unit and memory and a virtual operating system simulating functionality of an operating system of the computer system.

15. (New) The method of Claim 12, further comprising identifying a type of operating system intended for the target program that is to be executed by the virtual machine.

16. (New) The method of Claim 12, further comprising initializing the virtual machine by constructing the virtual machine out of a number of layered shells.

17. (New) The method of Claim 16, further comprising configuring the shells based upon a format of the target program.

18. (New) The method of Claim 12, wherein the virtual machine executes the target program starting at each entry point defined within an entry point table.

19. (New) The method of Claim 12, further comprising loading a software CPU shell when the virtual machine operates in the first and third modes of operation.

20. (New) The method of Claim 12, further comprising loading a language interpreter when the virtual machine operates in the second mode of operation.

21. (New) A computer system for discovering malicious code in a target program, comprising:

a processing unit;

a memory storage device; and

one or more program modules stored in said memory storage device for providing instructions to said processing unit;

said processing unit responsive to said instructions of said one or more program modules, operable for

evaluating a file format of the target program;

evaluating control fields within a header of a file containing the target program;

automatically configuring a virtual machine to execute the target program in one of three modes of operation based on the file format and the control fields within the header of the file, a first mode of operation comprising a real mode, a second mode of operation for executing target programs comprising a high level programming language, and third mode of operation for executing target programs comprising thirty-two bit code;

storing behavior flags representing behavior of the target program during execution of the target program by the virtual machine;

storing a sequence in which the behavior flags are set by the target program during execution of the target program by the virtual machine;

passing behavior flag data and sequence flag data to the computer system after execution of the target program by the virtual machine; and

evaluating the behavior flag data and sequence flag data with the computer system.

22. (New) The system of Claim 21, wherein the processing unit is further operable for terminating the virtual machine after execution of the target program, thereby removing from the computer system a copy of the target program that was contained within the virtual machine.

23. (New) The system of Claim 21, wherein the virtual machine comprises a virtual computer implemented by the one or more programs simulating functionality of a central processing unit and memory and a virtual operating system simulating functionality of an operating system of the computer system.

24. (New) The system of Claim 21, wherein the processing unit is further operable for identifying a type of operating system intended for the target program that is to be executed by the virtual machine.

25. (New) The system of Claim 21, wherein the processing unit is further operable for initializing the virtual machine by constructing the virtual machine out of a number of layered shells.

26. (New) The system of Claim 25, wherein the processing unit is further operable for configuring the shells based upon a format of the target program.

27. (New) The system of Claim 21, wherein the virtual machine executes the target program starting at each entry point defined within an entry point table.

28. (New) The system of Claim 21, wherein the processing unit is further operable for loading a software CPU shell when the virtual machine operates in the first and second modes of operation.

29. (New) The system of Claim 21, wherein the processing unit is further operable for loading a language interpreter when the virtual machine operates in the second mode of operation.

30. (New) A computer-implemented method for identifying malicious code in a target program comprising:

automatically configuring a virtual machine to execute the target program in one of three modes of operation, a first mode of operation simulating an operating system, a second mode of operation for executing a target program comprising a high level programming language, and third mode of operation for executing a target program comprising thirty-two bit code;

storing behavior flags representing behavior of the target program during execution of the target program by the virtual machine;

storing a sequence in which the behavior flags are set by the target program ~~of the target program~~ during execution of the target program by the virtual machine;

passing behavior flag data and sequence flag data to ~~the computer~~ system after execution of the target program by the virtual machine; and

terminating the virtual machine after execution of the target program, thereby removing from the computer system a copy of the target program that was contained within the virtual machine.

31. (New) The computer-implemented method of Claim 30, further comprising evaluating a file format of the target program.